

PRINCIPLES FOR AGRIFOOD RESEARCH & INNOVATION

+ GLOSSARY





WHAT IS THE PURPOSE OF THE PRINCIPLES?

If you are a research or innovation manager or a funder of innovation in the agrifood sector, in the private or public sphere, these Principles are for you.

Investment in research and innovation today will shape the agrifood systems of the future.

The choices that you make during an innovation process will affect the future benefits and drawbacks of the innovations you help to create; for example, what types of people win and lose, and what the effects are on the environment. Too often, these choices are not made consciously, and important issues are overlooked until it is too late.

The Principles will help you deliver better overall outcomes, by actively considering sustainable agrifood system objectives at key stages of your innovation projects.

WHAT ARE THE 8 PRINCIPLES?

INNOVATION PROCESS PRINCIPLES (1-4)

1. Set out a clear theory of change defining intended impacts, based on a food systems perspective and reflexive learning

1.1. Clear and flexible theory of change defining intended impact of proposed innovation

1.2. Applied systems thinking at different scales, including all impacted actors and activities

1.3. Reflexive monitoring and evaluation to adapt route to impact to changing conditions



2. Design transparent and evidence-based innovation processes

2.1. Information on innovation goals, key intended outcomes, and budgets publicly available

2.2. Analysis of needed resources and capabilities, and the ability to obtain them

2.3. Evidence-based processes including use of credible metrics

2.4. Sharing of knowledge/insights, as appropriate, with others (public or private entities)

INNOVATION PROCESS PRINCIPLES (CONT.)

3. Conduct innovation processes in an inclusive and ethical manner

3.1. Inclusive, fair and transparent decision-making within innovation processes, ensuring all relevant stakeholders are included

3.2. Fair and inclusive partnerships, and fair and ethical apportioning of benefits

3.3. Active consideration of all relevant types of knowledge

3.4. Ethically conducted innovation processes in compliance with human rights and other relevant international standards



4. Address potential trade-offs, synergies, efficiencies, and unintended effects

4.1. Transparent and systematic analysis of inputs, outputs, and agrifood system outcomes (Principles 5 to 8)

4.2. Transparent monitoring of winners and losers in innovation processes and outcomes (including unintended)

INNOVATION OUTCOME PRINCIPLES (5-8)

5. Consider contribution to improved food and nutrition security and health

- 5.1. Food security
- 5.2. Adequate nutrition
- 5.3. One Health



6. Consider contribution to sustainable and circular management and utilization of natural resources

- 6.1. Biodiversity and integrated habitats
- 6.2. Climate change mitigation
- 6.3. Clean water
- 6.4. Clean air
- 6.5. Soil health

INNOVATION OUTCOME PRINCIPLES (CONT.)

7. Consider contribution to a viable economy and sustainable livelihoods

7.1. A viable agrifood systems sector contributing to the wider economy.

7.2. Secure and stable livelihoods of actors within the agrifood sector



8. Consider contribution to an ethical, equitable, and adaptive agrifood system for current and future generations

8.1. Human rights and decent working conditions

8.2. Distribution of risks, benefits, and decision-making power within the household and along the value chain

8.3. Inclusiveness

8.4. Animal welfare

8.5. Adaptation that is equitable, including to climate and environmental change



GLOSSARY



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A viable agrifood systems sector (contributing to the wider economy) – A viable agrifood system sector is one that supports the health of the wider economy. That is, a sector that promotes sustainable economic practices and bolsters the wider economy by providing the basis for human and societal functioning, while balancing risks. A viable food systems sector contributes to the functioning of a healthy and stable economy, financial and price stability, the effective use of natural resources, and employment opportunities (for both large and small actors within the system), among other things. The work by the Organisation for Economic Cooperation and Development (OECD) on "inclusive growth" is a valuable resource on how to make a sector not only viable but also inclusive for all stakeholders.

Source: CoSAI internal suggestion (2021).

Adaptation – Adaptation refers to the processes, adjustments, or actions in natural or human/social systems in response to actual or expected stimuli or their effects, which reduce, moderate, or cope with harm or the risk of harm, or take advantage of beneficial opportunities. An innovation process that actively considers adaptation is one that understands how the innovation will allow, cause, or promote adaptation, in a positive direction; for example, an innovative mobile technology that cheaply allows farmers to access localized weather predictions and therefore permits them to modify their practices to suit those weather conditions in the short term and allow for better planning for climatic changes in the long term. Another example includes the introduction of an agroforestry land management system to increase soil carbon content and soil water retention to improve overall soil conditions and the tolerance of the farming system to drought and other shocks as well as diversifying income streams and spreading risk across crop type. Information on how to track adaptation to climate change in agriculture can be found in the FAO's Tracking adaptation in agricultural sectors, Climate change adaptation indicators (2017). This can be applied to other adaptation phenomena, such as environmental change.

Source: The above definition was formed from multiple definitions found in the following paper: Ellina Levina and Dennis Tirpak, OECD (2006). Key Adaptation Concepts and Terms Draft paper – Agenda document 1. OECD/IEA Project for the Annex I Expert Group on the UNFCCC. <https://www.oecd.org/environment/cc/36278739.pdf>.

Adaptive – Characterized by or given to adaptation (see "Adaptation").

Adequate nutrition – Taking adequately, and using appropriately, energy and all nutrients required for the body's growth, renewal, and working. Influencing the "determinants" of a body's growth, renewal, and working at many levels could be considered a contribution to nutrition. An innovation that impacts these determinants contributes to nutrition (either positively or negatively). Achieving nutrition objectives is the result of a variety of determinants as shown in the United Nations Children's Fund (UNICEF)'s Conceptual Framework on the Determinants of Maternal and Child Nutrition, 2020 (p. 5).

Source: This definition was adapted from Sabri Ülker Food Research Foundation (2014). Adequate and Balanced Nutrition. [Online]. Available at: <https://www.sabriulkerfoundation.org/en/nutrition-and-healthy-lifestyle/detail/adequate-and-balanced-nutrition> [Accessed February 2022].

Agrifood system – The agrifood system covers the journey of food from farm to table – including when it is grown, fished, harvested, processed, packaged, transported, distributed, traded, bought, prepared, eaten and disposed of. It also encompasses non-food products that constitute livelihoods and all of the people as well as the activities, investments, and choices that play a part in getting these food and agricultural products to consumers and users. The term "agriculture" and its derivatives include fisheries, marine products, forestry, and forest products. Agrifood systems encompass the entire range of actors engaged in the primary production of food and non-food agricultural products and their interlinked value-adding activities, as well as in storage, aggregation, post-harvest handling, transportation, processing, distribution, marketing, disposal and consumption of all food products including those of non-agricultural origin.

Source: Report of FAO Council CL166 (2021). <http://www.fao.org/3/nf693en/nf693en.pdf>; Constitution of the Food and Agriculture Organization of the United Nations (1945). <http://www.fao.org/3/x5584e/x5584e0i.htm>;

FAO (2021). The State of Food and Agriculture 2021. Making agrifood systems more resilient to shocks and stresses. Rome, FAO. <https://doi.org/10.4060/cb4476en>

Agrifood systems sector – See: "A viable agrifood systems sector (contributing to the wider economy)".

Animal welfare – Broadly, animal welfare refers to the well-being of animals for food production, covering their handling, feeding, housing, transport, and slaughter along food value chains and emphasizing the avoidance of unnecessary suffering. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress. FAO's Animal Welfare Gateway is a multistakeholder knowledge exchange platform providing resources related to farm animal welfare. FARMS Initiative is another resource that encourages and supports meat, milk and egg producers, and other companies in the supply chain, towards meeting the Responsible Minimum Standards with respect to how farm animals are raised, transported and slaughtered.

Source: FAO (n.d.). FAO TERM PORTAL. [Online]. Available at: <https://www.fao.org/faoterm/en/> [Accessed February 2022].

Biodiversity – An umbrella term to describe collectively the variety and variability of nature. It encompasses three basic levels of organization in living systems: the genetic, species, and ecosystem levels. Plant and animal species are the most commonly recognized units of biological diversity, thus public concern has been mainly devoted to conserving species diversity. Looking at the levels of biodiversity more specifically: genetic biodiversity describes the variation between individuals and between populations within a species; species diversity describes the different types of plants, animals, and other life forms within a region and community; ecosystem diversity describes the variety of habitats found within an area (grassland, marsh, and woodland for instance). The Biodiversity Indicator Partnership provides guidance on how to develop biodiversity indicators:
<https://www.bipindicators.net/national-indicator-development/bidf>

Source: UNEP (n.d.). Biodiversity. [Online]. Available at: <https://leap.unep.org/knowledge/glossary/biodiversity>. [Accessed February 2022].

Clean air – Air that meets and maintains the air quality standards that are stipulated by the World Health Organization (WHO). See their latest report [WHO global air quality guidelines: particulate matter \(PM2.5 and PM10\), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide](#), as well as air quality standards that may be legislated in the area of concern. WHO has an [air quality database](#) that can provide information on the current air quality in the region concerned.

Source: CoSAI internal suggestion (2021).

Clean water – Water that meets and maintains the water quality standards that are stipulated by the World Health Organization (in terms of drinking water, see their latest report [Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum](#)), or that may be legislated in the area of concern. The [OECD Council Recommendation on Water](#) (2016) provides guidance on the effective and efficient management of water resources and water services.

Source: CoSAI internal suggestion (2021).

Climate change mitigation – Changes, substitutions, and new actions that reduce greenhouse gas emissions per unit of output. Specifically, mitigation, with respect to climate change, means implementing policies to reduce greenhouse gas emissions and enhance sinks. [FAO's Climate Change Knowledge Hub](#) provides data, learning materials and activities, guidelines, policy advice, and tools for enhancing capacity to deliver on climate and sustainability goals.

Source: FAO (n.d.). FAO TERM PORTAL. [Online]. Available at: <https://www.fao.org/faoterm/en/> [Accessed February 2022].

Cluster (of projects) – See “Small cluster (of projects)”.

Circular management – Circular management of resources is a management style that reduces demand for primary or virgin natural resources and the materials that are derived from them. Circularity implies keeping resources in the system for as long as possible through reuse and recycling to minimize waste. The OECD's RE-CIRCLE: resource efficiency and circular economy provides policy guidance on resource efficiency and the transition to a circular economy.

Source: OECD (n.d.). [Online]. Available at: <https://www.oecd-ilibrary.org/sites/5ab8c6da-en/index.html?itemId=/content/component/5ab8c6da-en#:~:text=For%20example%2C%20for%20the%20European,reduced%20demand%20are%20often%20highlighted> [Accessed April 2022].

Consider – Through processes, such as research, analysis, interviews, and stakeholder engagement (among others), build an understanding of whether and how your innovation accounts, could account, or does not account for, and how it impacts or potentially impacts, the components of the Principles and sub-Principles. These processes and their results should be undertaken iteratively throughout the innovation process and documented.

If findings reveal that your project could, but does not apply the Principles, or could better address/apply the Principles, and project resources make it possible, you should take steps to course-correct your innovation to either apply or better apply the Principles (see “Implement needed changes”; in line with a score of 3 in the Scoring Template).

If a Principle or sub-Principle is not relevant (for example, your project builds solar batteries for irrigation pumps and so, the animal welfare sub-Principle is not applicable) or if your project is already addressing it (applying evidence-based, contextually adapted, best practice methods), then this should be mentioned in the Scoring Template, and supported with evidence.

Source: CoSAI internal suggestion (2021).

Decent work – Productive work in which rights are protected, which generates an adequate income, with adequate social protection. Also means sufficient work, in the sense that all should have full access to income-earning opportunities.

Source: International Labour Organization (n.d.). ILO Thesaurus. [Online]. Available at: <https://metadata.ilo.org/thesaurus.html> [Accessed January 2023].

Direct investment – In this context, direct investment refers to direct funding or other direct support (e.g. time or in-kind contributions) for innovation processes. Excluded is funding or support for the broader enabling environment for innovation for sustainable agrifood systems – for example funding for education, connectivity, or other infrastructure.

Economy – See “A viable agrifood systems sector (contributing to the wider economy)”.

Equitable – The distribution of goods, services, opportunities, and risks in a fair and impartial manner, considering the concerned actors’ contexts, needs, capacities, and capabilities. Equity goes beyond gender. Equity considers other aspects of a person’s identity and context such as class, caste, religion, whether the actor/s are indigenous, where the actor sits within intra-household power dynamics or the context’s social hierarchy, whether the actor is disabled, and whether the actor is pregnant, among others. Equity identifies groups that are economically excluded, socially or politically excluded, vulnerable groups, minorities, and marginalized communities, among others. The United Nations Development Programme (UNDP)’s A Common Framework for Gender Equality and Social Inclusion is an excellent resource with guidance on how to include equity considerations into projects. The International Fund for Agricultural Development’s Rural Development Report (2016) provides an analytical framework for considering how innovations can support equitable rural transformations and provides insight into key strategies, policies, and investments that can enable innovations to support inclusive rural transformation while avoiding adverse effects.

Source: CoSAI internal suggestion (2021).

Ethical[lly conducted innovation processes] – Here, innovation processes that are considered as ethically conducted are those that adhere to basic human rights and animal welfare principles and adhere to an ethical framework (see, for example, an [article on the ethics of innovation](#) and the World Benchmarking Alliance’s [Leading practices from the 2021 Food and Agriculture Benchmark](#)). During innovation design, if an external ethical review has been conducted, this also deems an innovation process as being ethically conducted.

Source: CoSAI internal suggestion (2021).

Evidence – Evidence is the available body of facts or information used to support the scoring of the Principles. Evidence acts to back up the validity of the statements you have made in your template and the score you have chosen for yourself. Decision-making processes in innovation projects should all be documented. Evidence must be accessible – it must be able to be accessed by an external source, i.e. it is attached to or hyperlinked in the Scoring Template and cannot be blocked by passwords or other prevention to access methods. Evidence must be specific – it must be directly related to the sub-Principle in question and easily discernible, i.e. saying that the evidence can be found in the attached project design document is not enough, the page or section of the document (or website) must be provided. Evidence can be varied. It may be in the form of project documents, scientific evidence laid out in project documents, scientific evidence, qualitative and quantitative data, contextual evidence, "logic/common sense" and anecdotal evidence. Documents that record processes such as situational analyses that lay the foundation for well-articulated theories of change, identification of measurable results and risk responsive strategies, and systematic monitoring and reporting of the programs’ progress and evaluation can all support your score.

CIPD’s online resource on [Evidence-based practice for effective decision-making](#) provides information on the importance of evidence and how to provide it.

Source: CoSAI internal suggestion (2021).

Fair – Undertaking processes in a way that is right or reasonable, or treating a group of people equally, and not allowing personal opinions to influence your judgment.

Source: This definition was adapted from Cambridge Dictionary (2022). Meaning of fair in English. [Online]. Available at: <https://dictionary.cambridge.org/dictionary/english/fair> [Accessed March 2022].

Food security – Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. FAO’s [An Introduction to the Basic Concepts of Food Security](#) provides an overview, and FAO’s [State of Food Security and Nutrition in the World 2021](#) report provides information on the current state of global food security.

Source: FAO (n.d.). FAO TERM PORTAL. [Online]. Available at: <https://www.fao.org/faoterm/en/> [Accessed February 2022].

Food systems perspective – A food systems perspective is a way of viewing food and agricultural production that takes into account all of the behaviors, components, and actors of the food system as a whole in the context of its environment. It goes beyond a static and narrow view of food production to one that considers all behaviors, components, and actors that interact within the food production realm over time while acknowledging that these interactions could result in synergies and trade-offs that must be managed. The United Nations Food Systems Summit 2021 Scientific Group's paper, Food Systems – Definition, Concept and Application for the UN Food Systems Summit, highlights a food systems perspective on pages 7, 9, and 10). This [link](#) provides some guidance on how to build a systems perspective more generally.

Source: CoSAI internal suggestion (2021).

Health – A state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity. Ecosystems health is linked to human health; for a definition of One Health, see “One Health”.

Source: WHO (2006). Constitution of the World Health Organization – Basic Documents, Forty-fifth edition, Supplement, October 2006. <https://www.who.int/publications/m/item/constitution-of-the-world-health-organization>

Human rights – Human rights are those that comply with the Universal Declaration of Human Rights. UNICEF's Introduction to the Human Rights Based Approach provides guidance around how to assess what the human rights based approach entails in the different phases of a project cycle and their Implementing and monitoring the Convention on the Rights of the Child provides similar guidance.

Source: CoSAI internal suggestion (2021).

Inclusive – Characterized or exhibiting inclusiveness. (See “Inclusiveness”).

Inclusiveness – The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those having physical or intellectual disabilities or belonging to other minority groups. UNDP's A Common Framework for Gender Equality and Social Inclusion is an excellent resource with guidance on how to practice inclusivity by including equity considerations in innovation projects.

Source: Definition adapted from Oxford English Dictionary (2021).

Indicator – A “quantitative or qualitative factor or variable that provides a simple and reliable basis for assessing achievement, change or performance”. The Metrics Database contains suggestions of possible metrics for each of the sub-Principles.

Source: ISPC (2014). Data, metrics and monitoring in CGIAR – a strategic study. Rome, Italy, CGIAR Independent Science and Partnership Council (ISPC). 88 pp.
https://cas.cgiar.org/sites/default/files/ISPC_StrategyTrends_Metrics.pdf

Innovation – Agrifood systems innovation is the process whereby individuals or organizations bring new or existing products, processes, or ways of organizing into use for the first time in a specific context. Within the agrifood system, innovation can be understood as the process and a set of measures or actions that either develop or change the intensity and/or direction of a technology, policy, service, or institutional drivers that then lead to changes in the design, production, use, or recycling of goods and services and/or changes in the institutional environment. Innovation includes changes in practices, norms, markets, and institutional arrangements, which may foster new networks of food production, processing, distribution, and consumption. Innovation also includes "old" methodologies implemented in new places.

Source: Definition added to. Original definition from HLPE (2019). Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. <https://www.fao.org/3/ca5602en/ca5602en.pdf>

Innovation processes – Innovation processes are the different activities and phases that fall between the conception and initial innovation planning, and the implementation, monitoring, evaluating, and reporting, and scaling stages. Within each phase, there are elements (such as developing a theory of change, or implementing and validating evaluation findings) that can improve the chances that the process will deliver a more sustainable and equitable innovation to deliver more benefits and reduce harm.

Source: CoSAI internal suggestion (2021).

Innovation outcomes – An outcome of innovation is a result or a consequence, tangible or intangible, that is caused or produced by the innovation project or research at hand. Outcomes of innovation projects vary and varying outcomes can be achieved through one innovation project. An example of varying outcomes stemming from one innovation sees nutrition and food security outcomes, secure and stable livelihood outcomes, viable agrifood systems sector outcomes, climate change adaptation outcomes, biodiversity, soil, and water conservation outcomes (among others), all stemming from the uptake of a nutritious local vegetable variety in a farmer's crop rotation schedule. Another example sees equity outcomes, transparency outcomes, fairness outcomes, and project efficiency outcomes all stemming from the testing of a new participatory evaluation methodology to achieve "downward accountability" to project participants (alongside "upward accountability" to investors).

Source: CoSAI internal suggestion (2021).

Integrated habitats – Integrated habitats are a type of biodiversity (ecosystems diversity, which contains genetic and species biodiversity). Integrated habitats are linked or coordinated localities in which plants, animals, and other life forms naturally grow or live. They can be either the geographical area over which they extend, or the particular location in which a specimen is found. The Biodiversity Indicator Partnership provides guidance on how to develop biodiversity indicators: <https://www.bipindicators.net/national-indicator-development/bidf>.

Source: This definition was adapted from UNEP (n.d.). Habitat. [Online]. Available at: <https://leap.unep.org/knowledge/glossary/habitat> [Accessed February 2022].

Investors – An individual, an incorporated or unincorporated public or private enterprise, a government, or a group of related individuals that contribute to the processes of innovation (see “Innovation processes”).

Source: CoSAI internal suggestion (2021).

Institutional innovation – Institutional innovations are new rules and ways of organizing the relationships between different actors in a system. They take place when people and organizations (actors) strategically mobilize others through network relationships in order to repair, change, or replace institutions. This [article](#) by Deloitte highlights the importance of institutional innovation at the organizational scale (though it is applicable to other scales).

Source: FAO/INRA (2016). Innovative markets for sustainable agriculture – How innovations in market institutions encourage sustainable agriculture in developing countries. <http://www.fao.org/3/i5907e/i5907e.pdf>

Implement needed changes – Implementing needed changes in this context refers to modifying the innovation process, based on the evaluation and analysis of results stemming from reviews and monitoring, to better align the process with sustainable agrifood system objectives found in the Principles. This goes beyond just a discussion of findings and possible modifications to actual implementation and concrete changes.

Source: CoSAI internal suggestion (2021).

Livelihood – Combination of the resources used and the activities undertaken in order to live. Also see definition of “Secure and stable livelihoods within the agrifood sector”. FAO’s [Increasing the resilience of agricultural livelihoods](#) and the [Sustainable livelihoods: analysis at household level](#) provide resources on agricultural livelihoods.

Source: FAO (n.d.). FAO TERM PORTAL. [Online]. Available at: <https://www.fao.org/faoterm/en/> [Accessed February 2022].

Measurement method – A measurement method is a set of activities to generate raw data (observations such as weight, height, plot size, etc.) that can be used to compute metrics. This can include modeling and the output generated from modeling.

Source: ISPC (2014). Data, metrics and monitoring in CGIAR – a strategic study. Rome, Italy, CGIAR Independent Science and Partnership Council (ISPC). 88 pp.
https://cas.cgiar.org/sites/default/files/ISPC_StrategyTrends_Metrics.pdf

Metric – Metrics represent the values on which indicators are built. These are computed by aggregating and combining raw data, for example, yield (harvest per hectare) or height for age. It is important to note that a metric can be an indicator if it is used to assess performance and decision-making. Thus all indicators are metrics, but not all metrics are indicators. See the [metrics database](#) accompanying the Principles.

Source: ISPC (2014). Data, metrics and monitoring in CGIAR – a strategic study. Rome, Italy, CGIAR Independent Science and Partnership Council (ISPC). 88 pp.
https://cas.cgiar.org/sites/default/files/ISPC_StrategyTrends_Metrics.pdf

Metric for Innovation in Sustainable Agrifood Systems – A metric in this context is a standard of measurement, quantitative or qualitative, that is linked to at least one Principle for Agrifood Research and Innovation and measures outcomes or processes indicating to what extent these contribute to the sustainability of agrifood systems or not. Also see the definition for “Metric”.

Mitigation – see “Climate change mitigation”.

Nutrition – See “Adequate nutrition”.

Nutrition (and food) security – Food and nutrition security is when all individuals have reliable access to sufficient quantities of affordable, nutritious food to lead a healthy life. Food and nutrition security has four dimensions that encompass both chronic and transitory (acute) situations’ food availability, access, utilization, and stability. Achieving nutrition objectives is the result of a variety of determinants as shown in UNICEF’s [Conceptual Framework on the Determinants of Maternal and Child Nutrition](#), 2020 (p. 5). See also “Adequate nutrition”.

Source: Association of Public and Land Grant Universities (n.d.). What is Food & Nutrition Security? [Online]. Available at: <https://www.aplu.org/our-work/2-fostering-research-innovation/challenge-of-change/food-security/> [Accessed February 2022].

One Health – One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.

Source: <https://wedocs.unep.org/bitstream/handle/20.500.11822/37600/JTFOWU.pdf> [Accessed January 2023]

Outcomes – See “Innovation outcomes”.

Principle for Agrifood Research and Innovation – A Principle in this context is a normative proposition guiding decision-making and work processes in agrifood-systems-related innovation systems (including investments in such) so that these contribute to the creation and/or strengthening of sustainable agrifood systems. Relevant examples of existing principles are listed in the Annex to the Terms of Reference for the task force.

Source: CoSAI internal suggestion (2021).

Project – For the purpose of the Principles, a project is an individual or collaborative undertaking that is carefully planned to achieve a particular aim. A project should have a logical structure with links between its objectives, activities, outputs, and outcomes, that simultaneously move towards the project's aim. Examples of projects could be "Developing irrigation infrastructure in the lower western regions of Senegal" or "Exploring the potential for rural Nepalese farmers to reduce fertiliser reliance while maintaining crop yields".

Reflexive learning – Here, reflexive learning involves actively monitoring, evaluating, and assessing the outcomes, and consequences of your innovation project decisions, processes, and outputs whilst the project or innovation is ongoing to engage in continuous learning. This is done to improve the process and its associated outcomes, putting learned changes into practice during the project or innovation lifespan. A good tool on reflexive learning can be found here.

Source: CoSAI internal suggestion (2021).

Research and innovation – For the purposes of the Principles, research is considered a type of innovation. See the definition of "Innovation".

Research and innovation manager – Someone implementing, managing or evaluating a research or innovation project.

Risks – Here, risks refer to the uncertainty of an action's or event's outcome that is linked to the project or innovation, whether positive, negative, or both, which may have an impact on either the end-users or external actors that are not the direct target users/recipients. FAO's E-Learning Academy has a tool on assessing risks in agriculture.

Source: This definition was adapted from: FAO (n.d.). FAO TERM PORTAL. [Online]. Available at: <https://www.fao.org/faoterm/en/> [Accessed February 2022].

Secure (and stable livelihoods within the agrifood sector) – Having a secure and stable livelihood refers to the security (a high reliability of consistently being available) and stability (free from major fluctuations) of payments, in cash, in kind, or in services, which are received by individuals (for themselves or their family members), as a result of their current or former involvement in paid or self-employment jobs. Secure and stable livelihoods should provide individuals with a decent standard of living. Economic opportunities to earn secure and stable livelihoods within the agrifood sector should be inclusive and equitable. FAO's Increasing the resilience of agricultural livelihoods and the Sustainable livelihoods: analysis at household level provide resources on agricultural livelihoods.

Source: This definition was adapted from ILO (n.d.). International Labour Organization Glossary of Statistical Terms (ILOSTAT).

Small cluster (of projects) – A small cluster of projects is considered a group of projects that include similar themes and have similar intended agrifood system outcomes. Ideally, the strategic decision-maker or team making the strategic decisions should be the same for all the projects in the cluster. However, the number of projects that fall within the cluster should not be excessive, as this will introduce too much variance within the scores and hinder a proper reading of the Principles' application. For example, five projects that fall within an umbrella program, and that all aim to improve household incomes through various methods of increasing water use efficiency may be considered a cluster. When deciding whether to apply the Principles at the project level or the clustered level, please keep in mind the following:

- The level is too specific if the project is very technical and does not deal directly with the issues in the principles (for example, a project that focuses on developing solar batteries and does not consider wider issues). In this case, move up a level, to score the relevant cluster of projects (in this example, this could be the cluster of projects developing solar irrigation in a certain geographical area).
- The level is too broad if there are too many included projects in the cluster chosen, that would give different answers if you scored them according to the Principles. For example, avoid scoring an entire research program with clusters of projects that have different overall target audiences or geographic areas.

Source: CoSAI internal suggestion (2021).

Social innovation – Social innovation is defined as the development and implementation of new ideas (products, services and models) to meet social needs and create new social relationships or collaborations. It represents new responses to pressing social demands, which affect the process of social interactions, and is aimed at improving human well-being. The OECD provides information on social innovation, including the LEED Forum on Social Innovations.

Source: Directorate-General for Regional and Urban Policy (European Commission) (2013). Guide to social innovation. <https://op.europa.eu/en/publication-detail/-/publication/12d044fe-617a-4131-93c2-5e0a951a095c>

Soil health – Soil health is the capacity of soil to function as a living system, with ecosystem and land use boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and promote plant and animal health. Healthy soils maintain a diverse community of soil organisms that help to control plant disease, insects and weed pests; form beneficial symbiotic associations with plant roots; recycle essential plant nutrients; improve soil structure with positive repercussions for soil water and nutrient holding capacity, and ultimately improve crop production. FAO's Soil Portal is a resource for soil health, and soil health indicators can be found from the Global Land Degradation Information System (GLADIS) and the Status of the World's Soil Resources report (SWSR).

Source: FAO (2008). NSP – What is a healthy soil? [Online]. Available at: <https://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/soil-biodiversity/the-nature-of-soil/what-is-a-healthy-soil/en/> [Accessed February 2022].

Sustainable – A process is sustainable if it meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability typically encompasses the four pillars of society, environment, culture and economy. See FAO's resource on [Food and agricultural sustainability](#).

Source: UNESCO (2021). Sustainable Development. [Online]. Available at: <https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd> [Accessed February 2022].

Sustainable agriculture intensification – Sustainable agriculture intensification (SAI) is a term with many definitions and past controversies that goes well beyond the narrow concept of "producing more food with less environmental damage". Here, SAI refers to the transformative changes in agriculture and food systems that are urgently required to meet rapidly increasing global needs for affordable, nutritious, safe and healthy food, while protecting and improving the natural environment and promoting resilient livelihoods and social equity. See the Commission on Sustainable Agriculture Intensification's [resources](#).

Source: CoSAI (2021). <https://www.iwmi.cgiar.org/archive/cosai/frequently-asked-questions/>

Sustainable agrifood system – A sustainable agrifood system is one that undertakes all activities related to the production, processing, distribution, sale, preparation, and consumption of food in a manner that provides food and nutrition security, economic opportunities, and livelihoods for agrifood system actors, while minimizing its environmental impacts and contributing to sustainable management and utilization of natural resources and social equity. See Foresight for Food's blog article on [The Dynamics of Food Systems – A Conceptual Model](#) and the OECD's resource on [Food systems transformations](#).

Source: This definition was built on the definition coined by Colin Sage (2018). Agro-food systems. Available at: https://www.researchgate.net/publication/325473166_Agro-food_systems#:~:text=The%20agro-food%20system%20comprises%20all%20those%20activities%20related,us%20to%20place%20some%20greater%20importance%20upon%20the

Systems thinking – Systems thinking is a way to consider and analyze the various components and interactions that exist and occur within a system. It allows a deeper and more broad understanding of not only the obvious elements that spring to mind when analyzing a system, but also those that may be more obscure or "hidden". This deeper understanding can contribute to better predictions of the consequences of altering the system through, for example, an innovation. In the case of the agrifood system, elements of the system, such as agriculture's influence on migration through labor, may otherwise be overlooked or ill-considered, meaning innovation processes may not be aware of the impacts that the innovation may have on migration. Resources on agricultural systems thinking can be found [here](#), [here](#), and [here](#).

Source: CoSAI internal suggestion (2021).

Stable (Secure and stable livelihoods within the agrifood sector) – See "Secure and stable livelihoods within the agrifood sector".

Theory of change – A theory of change details the causal linkages between a project's actions and processes and its intended outcomes over short-, intermediate-, and long-term time scales. It shows why the particular way of working chosen for the project will elicit the intended outcomes or changes. It can be developed for any organization level, project, program, strategy, etc. A theory of change should be credible, being derived from research and previous experiences, achievable, meaning your organization has the capacity and resources to undertake the project, and testable, with clearly stated intentions, actions, and indicators to measure progress. In addition to this, a theory of change should ideally be supported by relevant stakeholders, garnering buy-in during the design stage. A theory of change should ideally be developed at the beginning of a project, during strategic decision-making processes. Though, if your project is finished, it can also be developed retroactively, to evaluate the project and highlight gaps or inconsistencies in the links between intended outcomes and actions. Resources can be found [here](#) and [here](#).

Source: This definition was adapted from NCVO (The National Council for Voluntary Organizations) Oct 12, 2020. How to build a theory of change. Available at: <https://www.ncvo.org.uk/help-and-guidance/strategy-and-impact/impact-evaluation/planning-your-impact-and-evaluation/identify-the-difference-you-want-to-make/how-to-build-a-theory-of-change/#/> [Accessed February 2022].

Trade-offs – Trade-offs refers to a method of distributing factors (positive and negative), all of which are not necessarily attainable at the same time, to ensure all parties receive equitable portions of both positive and negative distributions over time. The Green Policy Platform's [Agriculture, Nature Conservation, or Both? Managing trade-offs and synergies in sub-Saharan Africa](#) summarizes key concepts relating to trade-offs and synergies, including trade-off analysis and management.

Source: CoSAI internal suggestion (2021).

Transparent – Being transparent is enabling an environment where the aims and objectives, results and evaluation findings of innovation projects as well as information on their decisions, decision-making processes, project rationale, relevant data, and information related to accountability, are provided to the public in a comprehensible, accessible, and timely manner. Transparency and accountability go hand in hand.

Source: This definition was adapted from: OECD (2002). Glossary of Statistical terms: Transparency. [Online]. Available at: <https://stats.oecd.org/glossary/detail.asp?ID=4474> [Accessed February 2022].

Viable (agrifood systems sector) – See “A viable agrifood systems sector (contributing to the wider economy)”.

Winners and losers (of innovation) – Innovation in agriculture will always affect target groups and non-target groups in varying ways, which are sometimes unpredictable. Due to this, innovations result in winners and losers, those that benefit from an innovation, and those that feel negative effects due to its presence. For example, an innovation project aiming to reduce poverty by increasing crop yields through new seed varieties may benefit those end users that increase yields and concurrently household income, the "winners" of innovation. On the other hand, negative effects may arise from the new variety; its uptake may reduce the availability of staple diet crops on the local market, creating localized food shortages. Or, the introduction of a new crop may affect household dynamics, shifting the dynamics between male and female members of the household, negatively affecting females (for example, see Shibata et al. (2020) <https://onlinelibrary.wiley.com/doi/10.1002/jid.3497>). These examples demonstrate how innovations can bring about "losers". Although they are not always predictable, aiming to understand and forecast potential winners and losers of innovation is important for reducing and managing these negative "spill-overs".

Source: CoSAI internal suggestion (2021).